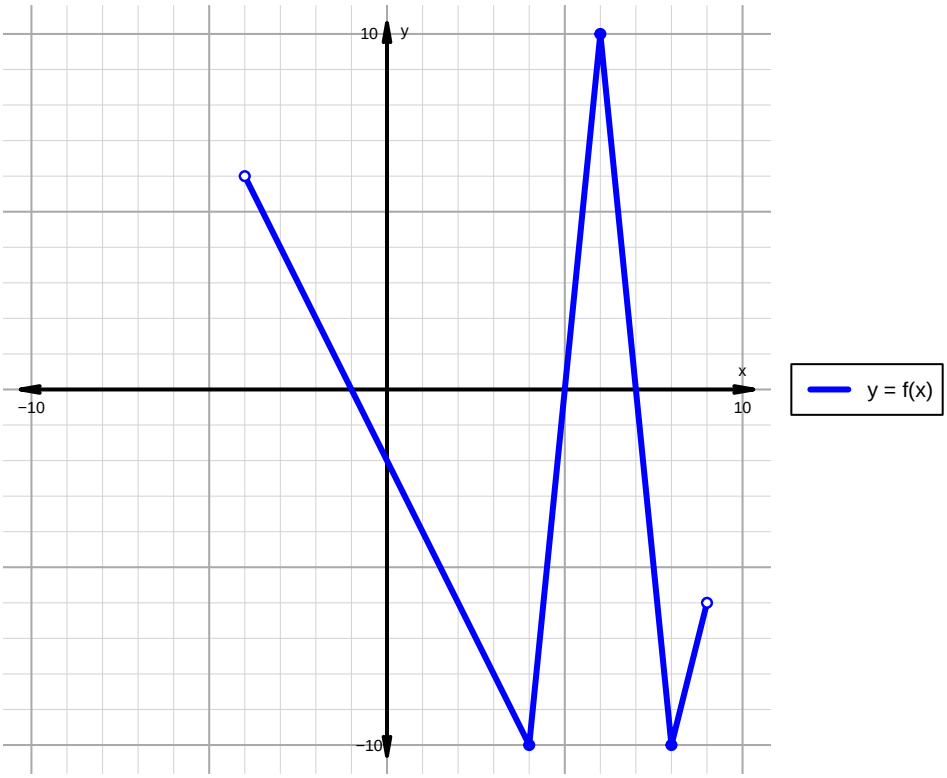
Name: Date:

Intervals, Transformations, and Slope Solution (version 168)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-4,-1)\cup(5,7)$
Negative	$(-1,5)\cup(7,9)$
Increasing	$(4,6)\cup(8,9)$
Decreasing	$(-4,4)\cup(6,8)$
Domain	$(-4,9)$
Range	$(-10,10)$

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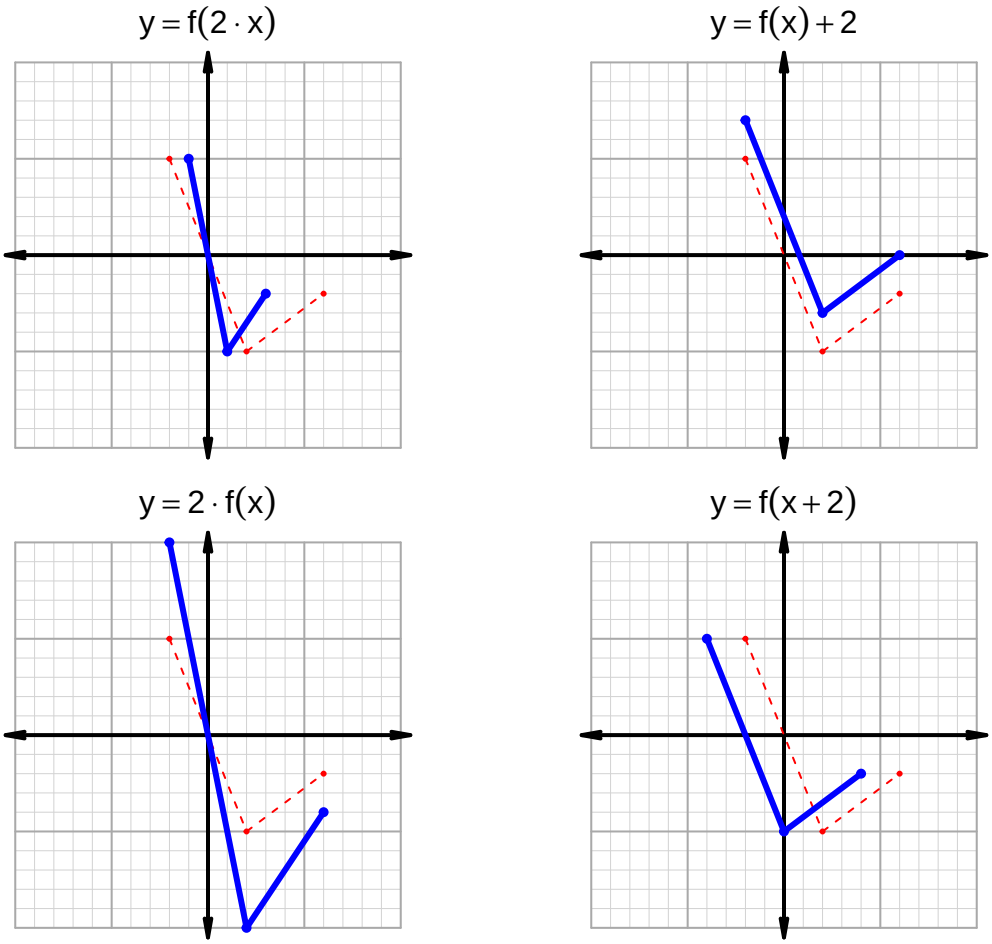
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 53$ and $x_2 = 78$. Express your answer as a reduced fraction.

x	$g(x)$
53	85
75	53
78	75
85	78

$\frac{g(78)-g(53)}{78-53} = \frac{75-85}{78-53} = \frac{-10}{25}$

The greatest common factor of -10 and 25 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-2}{5}$$